

- 6.—1. The Coleoptera of the Family Cissidæ found in Britain, with Descriptions of two new Species.—
 2. A new Species of the Coleopteran genus *Cryptorrhynchus* Illiger. By C. J. C. POOL, Assistant Curator Caird Insect House *.

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INDEX.

	Page
1. The Coleoptera of the Family Cissidæ found in Britain...	83
Introduction	83
Table of Genera and Species	84
Notes on Characters and Distribution, with Description of New Species	86
2. A new Species of the Coleopteran Genus <i>Cryptorrhynchus</i> Illiger	93

Introduction.

It is well known that since at least the time of that eminent French entomologist the Abbé Latreille (1806), the Order Coleoptera has been divided into major groups superior to families, which have been based principally on affinities in the form and character of the antennæ, or on the number of tarsal joints.

These groups constituted, as they have been, differently by different authorities and known by different names, present anomalies difficult to reconcile or explain.

The family Cissidæ Melliè (1848), which forms the subject of these notes, is in its morphology one of the most anomalous of these constituents.

It was included by the British authority Marsham (1802) in the genus *Ptinus* L., and by Stephens (1839) in the family Bostrichidæ Leach, and close to *Anobium* F.

Thus the family maintained its position in the works of subsequent British authorities among the Terebrida or Serricornia, of which such genera formed part.

In the latest general European list (Heyden, Reitter, and Weise, 1906), the Cissidæ have been placed after the Mycetophagidæ among the Clavicornia, and as that arrangement has been followed by the most recent list of the British Coleoptera (Newbery and Sharp, 1915), I propose to adopt it here as well as the specific nomenclature of the family there used.

The Cissidæ are fungivorous, and may be found in various kinds of *Boleti* and *Polyperi* on old trees and logs.

Very few species are attached to any particular kind of fungus.

A piece of *Boletus* from Godalming once produced no less than

* Communicated by the SECRETARY.

seven species, representing the four genera *Cis*, *Ennearthron*, *Octotemnus*, and *Rhopalodontus*.

At first one experiences some difficulty in naming specimens owing to the confusion of species and the presence of many imperfect or immature examples in the older collections available for study and comparison.

Colour variation is a constant source of difficulty owing to the fact that it might be due either to simple aberration or to different degrees of maturity of the specimens.

The colour of the clubs of the antennæ, sometimes mentioned as a guide to the identification of species closely related, must not be accepted as a reliable character without allowance for variation. I have studied great numbers of living specimens, from emergence from the pupa to undoubted maturity, and the results of my investigations enable me to say in which of the species this character is regular, or the reverse.

Any uncertainty or difficulty relating to immaturity may be avoided by breeding and keeping the insects alive for several months.

The breeding-process is very simple, and consists of gathering infested fungi, which may be kept in carefully labelled tins or jars in a cool situation, where the insects may develop under healthy conditions. A little damp blotting-paper or peat will supply all the necessary moisture, care being taken that sufficient ventilation is provided to prevent mildew.

Most of the species are long-lived, and may be found in the larval or adult state at any season. Pupation appears to be unusual in winter, but sometimes occurs in sheltered situations.

In the formation of the following table of the genus *Cis*, for which I claim little more than the merits of simplicity, I have to some extent grouped the species, as I have found them confounded in collections. For instance, the series of *C. micans* in the National Collection at one time consisted of four different species, viz.:—*C. micans*, *C. setiger*, *C. boleti* (small and immature), and *C. hispidus* (immature).

The general characters of shape and size will enable the student without figures or reference-collections to decide to which of the five groups his specimens belong before attempting the more difficult task of specific identification.

Table of Genera and Species.

Genus *Cis* Latreille.

Antennæ 10-jointed. Anterior coxæ transverse, round-oval; tibiæ not (or very rarely) dilated at apex.

Group 1.—Form short. Almost glabrous. L. $1\frac{1}{4}$ – $1\frac{3}{5}$ mm.

C. lineatocribratus Mell. Elytra strongly punctured in rows. Never black. Clubs of antennæ always pale.

C. nitidus Herbst. Colour pale brown to black. Clubs of antennæ always dark. Anterior angles of thorax produced.

C. jacquemarti Mell. Colour pale brown to black. Clubs of antennæ always pale. Anterior angles of thorax not produced.

* Group 2.—Form short. Plainly pubescent. L. $1\frac{1}{2}$ –2 mm.

C. bilamellatus Wood or Fowler? = *minutus* Blackburn. Upper surface dull. Clubs of antennæ dark.

C. lineatosetosus, sp. n. Upper surface shiny. Clubs of antennæ pale.

Group 3.—Oblong. Rather broad. L. 2–4 mm.

C. boleti Scop. Thorax uneven, irregular impressions on disc, base not bordered. Clubs of antennæ pale testaceous or black.

C. setiger Mell. = *villosulus* Marsh. Impressions on thorax more or less obsolete, base bordered. Clubs of antennæ pale testaceous or black.

C. micans F. Never quite black. Clubs of antennæ always dark.

C. hispidus Payk. Mature specimens always black. Clubs of antennæ always pale red.

C. bidentatus Ol. Dull. Scanty pubescence.

Group 4.—Elongate. Large. L. $2\frac{1}{4}$ – $2\frac{3}{4}$ mm.

C. alni Gyll. Shiny. Finely punctured. Very scantily pubescent. Clubs of antennæ pale or dark. Tibiæ long and slender.

C. latifrons, sp. n. Not so shiny. Coarsely punctured. Distinctly pubescent. Head very broad. Clubs of antennæ pale. Tibiæ short and stout.

C. punctulatus Gyll. Dull. More coarsely punctured and with longer pubescence. Clubs of antennæ pale or dark.

Group 5.—Elongate. Size smaller. L. 1 – $2\frac{1}{2}$ mm.

C. oblongus Mell. = *pygmaeus* Marsh. Black. Legs red or partly red and black. Clubs of antennæ variable, pale or dark. Pubescence usually reddish, rarely yellow or white.

Females sometimes much above average size of this group.

C. vestitus Mell. First ventral segment of abdomen of male bearing a small umbilicate depression in the middle (Newbery). Colour variable, but rarely black. Legs ferruginous, never red or black and red. Clubs of antennæ pale or black. Upper surface dull.

- C. festivus* Panz. First ventral segment of abdomen of male rugose all over, but with no umbilicate depression in the middle (Newbery). Clubs of antennæ always pale. Upper surface shiny.
- C. castaneus* Mell. = *fuscatus* Mell. Unicolorous castaneous. Depressed and dull. Clubs of antennæ never black.

Genus RHOPALODONTUS Melliè.

Antennæ 10-jointed. Anterior coxæ shorter (more or less conical); tibiæ dilated and denticulate at apex.

- R. perforatus* Gyll. Size larger. Dull unicolorous. Pale or dark brown. Clubs of antennæ never black. L. $1\frac{3}{4}$ –2 mm.
- R. fronticornis* Panz. Size smaller. Dull black, with pale testaceous legs. Clubs of antennæ sometimes black. L. 1 – $1\frac{1}{2}$ mm.

Genus ENNEARTHON Melliè.

Antennæ 9-jointed.

- E. affine* Gyll. Colour black. Clubs of antennæ alway dark. L. 1 – $1\frac{1}{2}$ mm.
- E. cornutum* Gyll. Colour brown. Clubs of antennæ usually dark, rarely pale. L. 1 – $1\frac{3}{4}$ mm.

Genus OCTOTEMNUS Melliè. (*Orophius* Redtenbacher.)

Antennæ 8-jointed.

- O. glabriculus* Gyll. Smooth, shiny. The number of joints of the antennæ will distinguish it from *Cis jacquemarti* in Group 1. L. 1 – $1\frac{1}{2}$ mm.

Notes on Characters and Distribution, with Description of New Species.

Genus CIS Latreille.

C. LINEATOCRIBRATUS Mell.

There is little or no variation noticeable amongst mature specimens.

Previously only recorded from Scotland and Cumberland (Day). The latter record (Brit. Col., Fow. & Don. vol. vi. p. 281) refers to a single specimen taken from fungus on birch at Gt. Salkeld by Mr. H. Britten. Abundant in a large detached brown fungus at Mark Ash, New Forest, Sept. 1913 (Pool). Near Brockenhurst (Dr. Sharp), Denny Wood (Bedwell).

C. NITIDUS Herbst.

Common and widely distributed throughout Britain.

Ireland, common in Dublin and Belfast districts.

It is found in Scotland in company with *C. jacquemarti* Mell., and is sometimes confounded with that species in collections.

C. JACQUEMARTI Mell.

Previously only recorded from Scotland, where it has been taken freely at Rannoch (Turner, Beare, and Donisthorpe), Garve in Ross-shire (Dr. Joy). Near Brockenhurst, 1915 (Dr. Sharp), in company with *C. nitidus* Herbst.

Not recorded from Ireland.

C. BILAMELLATUS Wood = *bilamellatus* Fowler (Europ. List Heyden, Reitter & Weise, 1906) = *minutus* Blackburn.

There is some considerable variation in size and development of the males. Small specimens occur without the upright plates on the thorax and clypeus, which might easily be mistaken for females or for members of another species.

Additional localities: Orpington, Kent (Pool), Richmond Park (Donisthorpe & Perkins), Highgate (Janson).

It has occurred at Port Lincoln, South Australia, and was named *C. minutus* by Blackburn, with whose type I have compared British specimens.

Exceeding abundant in Kent and Surrey, but is probably an introduction like the following species.

C. LINEATOSetosus, sp. n.

Short and broad, unicolorous testaceous, shiny. Head smooth, finely punctured and pubescent. Thorax finely punctured and pubescent, slightly narrowed in front, front margin with two indistinct teeth which merge with two other more distinct teeth on the clypeus when viewed from behind. Elytra twice as long as thorax, broad, closely punctured, especially near the scutellum, and clothed with ten straight rows of erect setæ. Legs and antennæ entirely pale testaceous.

Length $1\frac{1}{2}$ mm.

This insect resembles the small undeveloped males of *C. bilamellatus*, which bear only slight traces of the plates on the thorax and clypeus. It is not an indigenous species, but because of its long residence in London and the possibility of its having become established in our parks or woods, it is desirable that its origin should be recorded with these notes on species found in Britain.

Several specimens are in British collections, which I have traced to the following source:—

“86. In a fungus from the South Sea Islands that had been many years in Mus. Brit. (alive). From W. Carruthers, Esq., Sept. 1866.”

I am indebted to Mr. J. N. Halbert of the National Museum,

Dublin, for this extract from Dr. McNab's notebook. It is of special interest as showing how *C. bilamellatus* might have been imported from South Australia.

My specimen, given to me by Mr. O. E. Janson from his father's collection, bears a label with the following inscription:—"From Fungus in British Museum. Dr. McNab."

C. BOLETI Scop.

Exceedingly variable in size, colour, and punctuation of mature specimens.

A specimen from Sandown, which lived for five months, is entirely pale testaceous.

Pale examples occur with black clubs on the antennæ. Dark brown or black specimens may be found with either dark or pale clubs.

Rev. W. W. Fowler (Col. Brit. Is. p. 206, vol. iv.) says:—

"The *Cis rugulosus* of Melliè, which was introduced into our lists by Mr. Crotch, appears to be only a variety of *C. boleti* in which the rugose punctation of the elytra is more apparent and the larger punctures more or less obsolete; as intermediate variations occur it can hardly be regarded as a stable variety, much less as a species."

My series of this and other species of *Cis* contains some remarkable aberrations, which I have refrained from naming as I consider the latter part of the remarks quoted might apply equally well to any of them.

Common in fungus on logs, stumps, etc., throughout the Kingdom.

C. SETIGER Mell. = *villosulus* Marsh.

Probably the most variable species of the genus in size and colour.

I possess specimens displaying the following combinations:—Body black with black clubs of antennæ; dark brown with pale clubs; pale testaceous with black clubs; and unicolorous testaceous.

Recorded from Lancashire, Cheshire, and Suffolk. Common in Southern Counties in company with *C. boleti*. Exceedingly abundant in the Isle of Wight.

Not recorded from Scotland or Ireland.

C. MICANS F.

No variation observable amongst mature specimens.

Recent records of localities:—Oxford and Chatham districts (Walker), Newbury (Harwood), Cumberland (Britten), New Forest (Dr. Sharp), Burnham Beeches, Bucks, and Fittleworth, Sussex (W. E. Sharp), Godalming, Surrey, bred in abundance from *Boletus*, which was also inhabited by *C. boleti* and *C. setiger* (Pool), Penarth (Tomlin).

Not recorded from Scotland or Ireland.

C. hispidus Payk.

Pubescence usually bright reddish, but I have seen specimens with yellow or white pubescence.

Common and widely distributed throughout England.

I have never seen it in the Isle of Wight.

Taken in Scotland at Nethy Bridge (Beare) and Garve in Ross-shire (Dr. Joy).

Ireland: Maryborough (W. E. Sharp).

C. bidentatus Ol.

This species is sometimes abundant in a large fungus on old elms, which also produces *Dacne rufifrons* and *Mycetophagus multipunctatus*.

Common and widely distributed throughout England.

Scotland: Rannoch, in an old *Polyporus* on birch, also inhabited by *C. nitidus*, *C. jacquemarti*, and *Bolitophagus reticulatus* L. (Donisthorpe).

Ireland: Armagh and Dublin.

I have not seen it in the Isle of Wight.

C. dentatus Mell.

Mr. Donisthorpe has withdrawn this species from the British list (Ent. Record, vol. xxviii. p. 155, 1916).

C. alni Gyll.

The specimen recorded as *C. dentatus* Mell. (Ent. Record, vol. xix. p. 136, 1907) is a curious aberration of *C. alni* with abnormally coarse punctation of the thorax.

There appears to have been some interruption of the pigment which gives the insect a strange greenish opaque appearance, only the scutellum having the normal dark brown colour.

Whilst withdrawing *C. dentatus* from our list, Mr. Donisthorpe proposes the name of var. *mitfordi* for this aberration of *C. alni*. For reasons already stated in connection with *C. boleti*, I am not following Mr. Donisthorpe in this direction.

This species appears to be common in most districts where elders are growing. It occurs under the bark of dead elder-stems upon which the curious black "Jew's ear" fungus is growing. It has been recorded in fungus on oak in Dunham Park, Manchester, and Professor Beare tells me he has taken it plentifully in fungus on dead birch boughs at Nethy Bridge in Scotland.

Calbourne, I. of Wight (Morley), Sandown (Mitford).

There appears to be only one Irish record, from Mote Park, Roscommon.

C. latifrons, sp. n.

Black, elongate, parallel-sided, clothed with white outstanding pubescence, which, when examined under a lens, is very distinct

on the sides of the thorax and elytra. Head with eyes nearly as broad as the thorax, finely punctured and pubescent. Thorax and elytra coarsely but evenly punctured. There is an impunctate line behind the middle of thorax equal in width to the space occupied by two of the surrounding punctures. Antennæ testaceous; clubs slightly darker. Legs red. Tibiæ short and stout.

Length $1\frac{1}{2}$ - $2\frac{1}{2}$ mm.

This species comes near to *C. alni*, with which it has been confounded in collections. The longer pubescence, coarser punctation, as well as its shorter and stouter tibiæ, will easily distinguish it from that species.

I have recently taken two specimens from rotten beech to which is attached a small brown fungus containing *Cis* larvæ, collected with other fungi at Lyndhurst in September 1916. There is a specimen in the Power Collection from the New Forest, and another in the Waterhouse Collection taken in the same locality by Mr. Kemp. Another example without data is in the collection of Mr. H. Willoughby Ellis. It was along with some common New Forest species, so is probably from that district.

C. PUNCTULATUS Gyll.

This is now the only undoubted British species of *Cis* which has not been recorded from the south of England. Orton Woods, nr. Carlisle (Day & Britten).

Scotland: Braemar, Aviemore, Nethy Bridge, Balmuto, Rannoch and Peebles. Professor Beare tells me the species lives in a white fungus which develops between the wood and the bark of dead Scotch fir.

Not recorded from Ireland.

C. OBLONGUS Mell.=*pygmaeus* Marsh.

Forest Hill, Dulwich, Horsell, Coombe Wood, Tonbridge, Windsor, Reading; Knowle, Warwickshire.

I have bred it in profusion from fungi gathered from oak posts, at Sandown and Brading, I. of Wight.

Chatham (J. J. Walker), Oxford (Collins), North Holt, Middlesex (W. E. Sharp), Brockenhurst (Dr. Sharp), Enfield and Epping Forest (Pool), Harlech (Donisthorpe). Exminster, June 1909. Abundant on old posts, Bovey (P. de la Garde).

Not recorded from Scotland or Ireland.

I have never found it accompanied by any other species of *Cis* and have never seen the imago alive in winter. It is an active creature in June and July, when I have seen it in numbers running in hot sunshine upon posts and tree-trunks infested with the fungus in which it feeds.

C. VESTITUS Mell.

A variable species, of which I have seen the following combinations:—

Body black, with pale testaceous clubs of antennæ, Wallington (Power). Black, with black clubs; pale testaceous, with black clubs; as well as unicolorous brown and smoky-yellow forms. I have never found *C. vestitus* and *C. festivus* inhabiting the same fungus together.

Forest Hill, Dulwich; Olton and Sutton Park, Staffs.; Manchester district; Teesdale; Epping Forest (Beare). Richmond Park (Donisthorpe).

I have bred it in plenty from fungus scraped from the under-side of dead oak boughs from Enfield, Edmonton, Brockenhurst, and Sandown, I. of Wight. Widely distributed and not uncommon, but often overlooked or mistaken for *C. festivus*, with which I have seen it confounded in the Power and other collections.

Not recorded from Scotland or Ireland.

C. FESTIVUS Panz.

Clubs of antennæ always pale. Little or no variation in mature specimens.

Common and widely distributed in England and in I. of Wight. Usually found in fungi on oak posts or branches. Prof. Beare finds it every year with *C. alni*, in fungus on birch branches or faggots at Nethy Bridge. I have bred it in plenty from fungi from New Forest, Godalming, and Portsmouth district, but never in company with any other *Cis*.

Ireland (Boris); Queenstown (J. J. Walker).

C. CASTANEUS Mell. = *fuscatus* Mell.

The exchange list of British Coleoptera, Newbery & Sharp, 1915, shows the type-form of this species as not yet recorded from Britain.

This form actually represents the mature insect, which I have bred in great numbers from fungi from Enfield, Epping Forest, New Forest, Warlies Park, Essex, and Sherwood Forest. Richmond Park (Donisthorpe); Symonds Yat, Cardiff Cannock Chase, and Liverpool in a flour mill (Tomlin).

Immature specimens were called *C. fuscatus* by Mellié = *fuscatus* Mell. = var. *fuscatus* Newbery & Sharp, nec Mell.

C. ELONGATULUS Gyll.

First mentioned as British by Dr. Sharp (Ent. Mo. Mag. vol. viii. p. 83, 1871), who says Mr. Crotch considers he has Scotch examples of this species.

Dr. Sharp does not mention having seen the specimens.

There is a single specimen of a *Cis* in the Crotch Collection at the University Museum, Cambridge, standing in the name of

C. elongatulus. Unfortunately it has lost all of its legs and antennæ and is without data. It may be one of Mr. Crotch's Scotch examples, but I have failed to trace the others in any other collection.

The only other record of the species is Knowle, Wawickshire (Blatch) (Cat. Brit. Is., Fowler, vol. iv. p. 209). This is an error, as there is not even a label for *elongatulus* in the Blatch cabinet.

The position of this species in the British List depends entirely upon a single imperfect specimen of doubtful origin, and it probably remains for collectors in the north to prove if the Scotch record is justified.

Professor T. Hudson Beare tells me he has never found any specimen in Scotland which in any way agreed with the description of this species.

I am indebted to Mr. H. Willoughby Ellis for allowing me to study the Cissidæ in the Blatch Collection, and to Mr. Hugh Scott for the loan of the Crotch specimen for examination.

Genus RHOPALODONTUS Melliè.

R. PERFORATUS Gyll.

There are not any recent records of this insect, which has only occurred at Rannoch in Perthshire. Bred with *Cis nitidus*, from a hard *Boletus* found on old birch trees in the Black Forest (Foxcroft, 1853-4). The last record was Rannoch (Turner, 1858).

R. FRONTICORNIS Panz.

I have bred this species in plenty from fungi on elm and willow and beech from Epping Forest, Enfield, Cheshunt, Godalming, and have taken it in small numbers at Brockenhurst and Orpington, Kent.

Bovey Tracey (P. de la Garde, 1909, fungus on willows); Oxford district (J. J. Walker); Kerne Bridge, Newbury (Tomlin).

Not recorded from Scotland or Ireland.

Genus ENNEARTHRON Melliè.

E. AFFINE Gyll.

I have taken this insect at Brockenhurst, Sherwood, Epping Forest, Sandown, I. of Wight, Millwall Dock in fungus on aspen log with *C. setiger* and *Dermestes frischii*.

Windsor, Ashdown Forest (W. E. Sharp); Sheppey, Oxford, and Chatham (J. J. Walker); Teesdale, Durham (Bagnall).

Not recorded from Scotland or Ireland.

E. CORNUTUM Gyll.

Ditchingham, Norfolk (Beare), Ashdown Forest and Crowthorne (W. E. Sharp), nr. Exeter (Rendel). I have not seen

it in the Isle of Wight. Bred in numbers from various fungi from Portsea Island, Horndean, Hants, Sherwood Forest, New Forest, Epping Forest, Warlies Park, Essex, Enfield, Orpington, Kent (Pool).

Not recorded from Scotland or Ireland.

Genus OCTOTEMNUS Melliè.

O. GLABRICULUS Gyll.

No variation observable amongst mature specimens.

I have seen pale immature specimens in an old collection under the name of *Cis flavus* Kirby.

Abundant everywhere in *Boletus* on various trees.

2. A new Species of the Coleopteran Genus *Cryptorrhynchus* Illiger.

C. HARRISONI, sp. n.

Black, rostrum stout, slightly narrowed in centre, almost glabrous shiny and red in front; centre sparingly and base thickly clothed with elongate white scales. Antennæ red and shiny. Thorax rounded at sides, narrowed at apex, coarsely and closely punctured, sparingly clothed with white scales. Scutellum dull black, finely punctured. Elytra densely clothed at base and apex with white and yellow scales, and more sparingly with similar scales in the centre and marked with straight rows of large shallow punctures, smooth between rows, very finely punctured near suture. Legs dark reddish, clothed with elongate white scales; femora with a distinct tooth; tarsi red.

Length 3 mm.

A single specimen was taken by Mr. F. A. Harrison at Frinton-on-Sea, Essex, during the summer of 1915. Unfortunately Mr. Harrison does not remember the circumstances of its capture.

It may be an importation, but, like *Catharmiocerus maritimus* and other exceedingly local coast weevils, it might easily have been overlooked, especially as the locality appears to have provided but few attractions for British collectors.